

**REMARKS**

It is noted that, notwithstanding any claim amendments made herein, Applicants' intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

Claims 1, 3, 4, and 7-53 are all of the claims pending in the present Application. Claims 3, 4, 7-32, and 37-45 stand rejected under 35 USC §112, first paragraph, as failing the written description requirement. Claims 3, 4, 7-32, 37-45, and 50 stand rejected under 35 USC §112, second paragraph, as being indefinite.

Claims 34-36 stand rejected under 35 USC §103(a) as unpatentable over US Patent 5,434,917 to Naccache et al., further in view of US Patent 5,974,150 to Kaish et al. Claims 1, 3, 4, 7-9, 19-33, 37-44, 47, 52, and 53 stand rejected under 35 USC §103(a) as unpatentable over Naccache, further in view of Kaish, and further in view of US Patent 6,543,685 to Lien et al. Claim 45 stands rejected under 35 USC §103(a) as unpatentable over Naccache, further in view of Kaish and Lien, and further in view of US Patent 5,452,685 to Naccache (Naccache II).

Claims 10-13 stand rejected under 35 USC §103(a) as unpatentable over Naccache, further in view of Kaish and Lien, and further in view of US Patent 6,297,888 to Noyes et al. Claims 14 and 49 stand rejected under 35 USC §103(a) as unpatentable over Naccache, further in view of Kaish and Lien, and further in view of US Patent 6,155,605 to Bratchley et al.

Claim 48 stands rejected under 35 USC §103(a) as unpatentable over Naccache, further in view of Kaish and Lien, and further in view of US Patent 6,233,339 to Kawano et al. Claim 51 stands rejected under 35 USC §103(a) as unpatentable over Naccache, further in view of Kaish and Lien, and further in view of US Patent 3,795,805 to Swanberg et al.

Applicants gratefully acknowledge that claims 15-18 and 50 would be allowable if rewritten in independent format that overcomes the rejection under 35 USC §112, second paragraph. However, Applicants believe that at least some other claims are also allowable.

Therefore, these rejections are respectfully traversed in view of the following discussion.

## I. THE CLAIMED INVENTION

As described and claimed, for example by claim 39, the present invention is directed to a method of guaranteeing authenticity of an object that includes or has attached thereto at least one of a chip with a recording support and another recording support.

Attached to the object is a first sample of material obtainable by at least one of a chemical process and a physical process having a characteristic that samples generated by the process are random and non-reproducible. The first sample is associated with a first number obtained by reading the first sample using a first reader of a specific sort.

An exact value of the first number is recorded on at least one of the recording supports at said time of production in an exactly readable way, so that the first number can be checked against a later reading made with any reader of the specific sort at each time of verification of the object, thereby providing a first verification that verifies that a sample being read at the verification of the object is indeed the first sample.

At the time of production, at least one encrypted version of the first number is formed. At least one of the encrypted versions of the first number is also recorded in an exactly readable way on the object at the time of production. The at least one encrypted version of the first number is obtained by a method from public key cryptography. The recording of the at least one encrypted version thereby provides a second verification that verifies at the verification that the encrypted version of the first number was generated by an authorized party.

Information concerning the public key cryptography method is available so that the second verification can be made by anyone of an intended public.

## II. THE REJECTION BASED ON 35 USC §112, FIRST PARAGRAPH

Claims 3, 4, 7-32, and 37-45 are rejected as failing the written description requirement because the Examiner considers that claim 39 and 42 contain numerous terms not described in the original specification. Although Applicants maintain that one of ordinary skill in the art would readily understand this claim language from the original disclosure, Applicants have amended claims 39 and 42 to expedite prosecution.

### **III. THE REJECTION BASED ON 35 USC §112, SECOND PARAGRAPH**

Claims 3, 4, 7-32, 37-45, and 50 stand rejected as being indefinite because the Examiner considers that the term “only essentially reproducible” in claim 1, various terms in claim 39 and 42 considered as being relative terms, and use of “thereby” in claim 50 render these claims indefinite.

Relative to claim 1, the term “only essentially reproducible” is described in concept at lines 15-17 of page 17 and the section entitled “Fuzzy Reading”, beginning at line 5 of page 29, particularly at lines 3-9 and lines 17-20 of page 30.

Relative to claims 39 and 42, Applicants believe that the claim amendments above address the Examiner’s concerns. Relative to claim 50, Applicants disagree that the use of “thereby” renders this claim indefinite, since this usage is common in US patent claim construction. However, to expedite prosecution, this word has been eliminated.

Therefore, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

### **IV. THE PRIOR ART REJECTIONS**

#### Claims 34-36

Taking in order (approximately) of the prior art rejections in the Office Action, the Examiner first alleges that Naccache, in combination with Kaish renders obvious the present invention defined by claims 34-36. The Examiner considers that Naccache teaches all limitations of independent claim 34 but concedes that Naccache fails to teach or suggest using a sample subject to degeneration.

However, Applicants first point out that the Examiner seems to have missed the significance of the plain wording of independent claim 34 in that the claim language clearly refers to “... associating a number reproducibly to said sample by using a specific reader ....”

The rejection currently of record relies upon the identity data ID to satisfy this limitation. However, Applicants submit that the identity data ID fails to satisfy the plain meaning of the description that it be a number associated reproducibly to the sample by using a specific reader.

In other words, Applicants submit that one of ordinary skill in the art would not agree that the identity data is a number that is derived from reading the sample. As clearly described in the Abstract of Naccache, ID is a number related to the identity of the individual and is not a number derived from reading the sample using the reader.

In order to satisfy the plain meaning of the claim language, the corresponding number in Naccache is p, and there is no suggestion in that reference to record p by itself, along with the encoded version of p. Naccache teaches recording ID and SIG(ID), but that is an entirely different concept and is not what is being described in the claim language.

The Examiner relies upon Kaish as allegedly demonstrating that it would be obvious to replace the marbles used Naccache with the sample type used in Kaish. However, Kaish fails to overcome the basic deficiency identified above for Naccache.

Hence, turning to the clear language of the claims, in Naccache, there is no teaching or suggestion of: "... associating a number reproducibly to any said sample by using a specific reader as an initial reading of said characteristic; ... and recording said number and at least one of said at least one coded version into an area of said smart card....", as required by independent claim 34. Independent claims 35 and 36 have similar wording.

Moreover, relative to the Examiner's concession that Naccache fails to teach or suggest using a sample that is subject to degeneration, Applicants submit that these claims are not limited to samples subject to degeneration.

Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 34-36.

#### Claims 1, 3, 4, 7-9, 19-33, 37-44, 47, 52, and 53

The Examiner alleges that these claims are rendered obvious by Naccache, further in view of Kaish, and further in view of Lien.

Relative to claims 1, 3, 4, 52, and 53, the Examiner alleges that the identity data ID satisfies the claim limitation as being a number associated to the sample by the using a specific reader. However, as pointed out above, the ID number, as clearly described in the Abstract of Naccache, is a number related to the identity of the individual and is not a number derived from

reading the sample using the reader. Neither Kaish or Lien remedies this deficiency of Naccache.

Hence, turning to the clear language of the claims, in Naccache there is no teaching or suggestion of: "...using a specific reader to take a measurement of said characteristic of said sample to associate a number reproducibly to said sample; and to allow for sample-reader combinations such that the number associated to said sample is only essentially reproducible at a time of verification, recording said number on said object on at least one of said first recording support and said second recording support", as required by claim 1.

Therefore, claims 1 and 7 are clearly patentable over the prior art currently of record.

Relative to the rejection for claims 3 and 4, Naccache is the primary reference for this rejection and clearly, at lines 12-15 of column 1, teaches against converting it into a smart card. Therefore, it is submitted that Naccache cannot be even used as the primary reference for evaluation of these two claims.

Relative to the Examiner's rationale to combine Kaish and Lien with Naccache, the Examiner alleges that Naccache fails to teach or suggest using "... a sample of material obtainable only by at least one of chemical and physical processes such that a measurable characteristic of said sample is random and not reproducible, and to show another recording support."

To overcome these deficiencies, the Examiner relies upon Kaish and Lien and alleges that: "*it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Naccache as per teaching of Kaish and Lien to gain the benefit of obtaining a legal remedy in the case of simply copying said object (Knish (sic), col. 22, line 34-35) and encoding a magnetic strip on the card and adding a program into an embedded chip for "smart card" status (Lien, col. 1, line 16-18).*"

Applicants submit that there are several problems with this reasoning.

First, it is submitted that, contrary to the Examiner's conclusion, one of ordinary skill in the art would consider that the physical process described in Naccache does indeed provide a random pattern that is even considered in that reference as essentially impossible to duplicate (lines 34-42 of column 1). Applicants submit that the burden on the Examiner is to reasonably justify that one of ordinary skill in the art would obviously modify the clearly discrete sample

using steel marbles in Naccache with a sample that cannot be precisely read at the time of verification.

Applicants submit that Naccache is presumed to be a perfectly-functioning system, and that Naccache itself certainly makes no suggestion to modify its own basic technique based on embedding steel marbles in plastic.

In contrast to the plastic card of Naccache, Kaish differs in a fundamental way in that it addresses the problem of labels and uses an entirely different technique from the steel marbles embedded in plastic. That is, as clearly described, beginning at line 13 of column 12, Kaish uses dichroic fibers to provide the random pattern. Clearly, the dichroic fibers of Kaish are not compatible with the plastic used in Naccache, and there is no suggestion in Kaish to use these fibers in plastic cards.

Therefore, Applicants submit that one of ordinary skill in the art would not at all be motivated to attempt to somehow weave the dichroic fibers of Kaish, such as would be woven into cloth or paper, into the plastic card used in Naccache. Absent some justification to the contrary, such modification would destroy the plastic card and would certainly be an entirely different principle from that of using the steel marbles.

Second, relative to the Examiner's rationale that lines 34-35 of column 22 of Kaish provide justification for modification of Naccache because it would provide the "... benefit of obtaining legal remedy in the case of simply copying said object", Applicants submit that this rationale fails to meet the initial burden of a *prima facie* rejection under 35 USC §103(a), as even described in the MPEP.

That is, MPEP § 2143 states: "*The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.*" Applicants submit that the rationale of merely reciting the benefit of the missing element fails to meet the initial burden that the prior art suggest the "desirability of the combination". The Examiner points to no description in Kaish that the woven dichroic fibers be somehow incorporated in plastic, let alone in a plastic card used for security.

Additionally, Applicants submit that the copyright benefit has no relevance to the smart card of Naccache. The description at lines 34-35 (e.g., "... *copyright text 7 (provided to aid in*

*obtaining a legal remedy in the case of simple copying)"* do not refer to the dichroic fibers used to generate the random pattern. Rather, this line refers to the entirely different concept of adding, to the label, text that has been copyrighted. Such additional copyrighted text allows a remedy for simple copying.

The plastic card of Naccache is not described as incorporating text, let alone copyrighted text. Nor is there any reason to protect the plastic card having the random marble pattern of Naccache against simple copying, since it simply cannot be copied. Therefore, one of ordinary skill in the art would not consider Naccache's marble-embedded plastic card as being subject to the problem addressed by adding copyrighted text as a remedy of simply copying.

Moreover, addition of such copyrighted text would have no relation whatsoever to replacing the steel marbles of Naccache (if possible to achieve) with the woven dichroic fibers of Kaish. Therefore, Applicants submit that there is no proper motivation to somehow modify Naccache with one or more concepts in Kaish, let alone replace the steel marbles in the plastic with dichroic fibers somehow to be woven into the plastic.

Relative to the urged modification of Naccache by Lien, Applicants submit that one of ordinary skill in the art would interpret that lines 12-15 of column 1 of Naccache expressly teach against the modifications urged by the Examiner to add a microprocessor to Naccache. That is, Naccache itself, at lines 10-15 in column 1, states that its method is superior to both the conventional cards having "memory means" and to microprocessor-based smart cards.

This express teaching against the necessary modification has to be addressed in a *prima facie* rejection before the initial burden has been met, as clearly described in MPEP 2143.01: "*Where the teachings of two or more prior art references conflict, the examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another.*"

Hence, turning to the clear language of the claims, Applicants submit that there is no teaching or suggestion in Naccache of: "... to allow for sample-reader combinations such that the number associated to said sample is only essentially reproducible, recording said first number on said object card on said recording support on one of said chip and said another recording support, ....", as required by claim 1.

Applicants submit that for this reason alone, claim 1 is clearly patentable over Naccache, in addition to the reason above that the ID number of Naccache fails to satisfy the plain meaning of the claim language that requires that it be a number resulting from reading the sample..

Relative to the rejection for claim 8, Applicants submit that the rejection currently of record fails to address the plain meaning of this claim language. This claim specifically describes that the initial reading has more information than possible to obtain in subsequent readings and that this initially-obtained full information be recorded on the chip carried on the object. Applicants submit that the RSA modulus scheme described in the final paragraph of Naccache is an entirely different concept and that this method makes no suggestion to gather more information during the initial reading than during subsequent readings.

Therefore, claims 8-10 are clearly patentable over Naccache.

Relative to the rejection for claims 14, 26-29, and 47, Applicants submit that the only claim of this group that has reasonably been addressed is claim 47. That is, relative to claim 14, Kaish provides no indication of actually sensing the degeneration. Rather, lines 7-43 of column 15 merely refer to the inability of being able to get the same reading over time that would permit authenticating the original reading, an entirely different concept from actually determining the amount of degeneration.

Relative to the rejection for claim 19, the Examiner relies upon the ability of using the dichroic fibers in Kaish on paper instruments. The problem with this analysis is that the plastic cards used in Naccache are not paper and changing them to be paper defeats the purpose of that invention wherein metal marbles are embedded in plastic. Therefore, the Examiner's initial burden of this rejection has not been met.

Relative to the rejection for claim 20, 21, and 30, claims 21 and 30 do not refer to the original computation, as the Examiner seems to imply. Rather, these claims refer to a change in certification after the initial certification. Therefore, the initial burden has not been met.

Relative to the rejection for claim 24, the small metal or ferrite particles of Naccache might be considered a "mineral", using the definition that iron ore is obtained by mining. However, the plain meaning of the claim language precludes this interpretation of the steel marbles used in Naccache, since the random sample in this technique is not due to the random

pattern of an exposed face of a mineral sample, but, rather, from the distribution of the steel marbles.

Similarly, relative to claims 26-29, the plain meaning of the claim language is not addressed.

Relative to claim 32, the plain meaning has not been addressed, in that none of the prior art references have been alleged as having a plurality of coded versions of numbers encoded.

Relative to claim 33, the plain meaning has not been addressed, since the ID of Naccache fails to satisfy the requirement that it is provided by the scanner.

Relative to claim 37, the Examiner is understood as relying upon the “copyright text” as comprising the date of issue of the object. Applicants submit that “copyright text” and “date of issue of the object” are two entirely different concepts, and, contrary to the implication in the rejection currently of record, “copyright text” does not imply a date of issue of the object.

Relative to independent claim 39, the plain meaning of the claim language requires that both the raw number from the initial scanning and an encrypted version of that number be recorded. The advantage of this aspect of the present invention is that recording the number as read from the reader permits a verification of the sample alone, without having to take into account the factor of the encoding process. This feature is particularly significant when the sample is subject to degeneration, since the output from the reader will provide a clear indication of the degeneration. None of the prior art references record both the number obtained during the reading of the sample and the encrypted version. Moreover, as indicated above, the number from the scanner in Naccache is p, not ID, as implied in the rejection currently of record.

Relative to claims 40 and 43, the ID is not obtained by the reading of the sample, as required by the plain meaning of the claim language.

Relative to claim 41, the plain meaning of the claim language requires a second encrypted version of the number obtained by the reader. The rejection fails to address this second encrypted version.

Relative to claim 42, the plain meaning of the claim language requires that a statistical method be used to extract information from the number obtained by the reader. The rejection fails to identify or otherwise address using a statistical method of the reader result.

Relative to claim 44, there is no identification in the rejection of a second encrypted version of the reader result.

Relative to the rejection for claim 47, as previously discussed above, Applicants submit that there is no reason to modify Naccache with Kaish and that Naccache contains a basic deficiency not addressed in the rejection (e.g., that the ID is not derived from the reading of the sample).

Relative to the Examiner's discussion in the fourth and fifth full paragraphs of page 10 of the Office Action, this discussion concerning dividing the label into regions does not seem related to these claims and the point being made is not understood.

Relative to claim 52, the plain meaning this claim has not been addressed. There is no suggestion in Naccache, Kaish, or Lien of determining a first number by a reader and then forming a second number by extracting information from the first number. The rejection currently of record fails to meet its initial burden. The plain meaning of the language of claim 53 is similarly not addressed in the rejection.

#### Claim 45

The Examiner alleges that claim 45 is rendered obvious by Naccache, further in view of Kaish, further in view of Lien, and further in view of Naccache II.

The Examiner concedes that none of Naccache, Kaish, or Lien teach or suggest using a base 3 number format. To overcome this deficiency, the Examiner introduces Naccache II, pointing to lines 48-55 of column 4.

However, Applicants submit that the “d” discussed in these lines is not “base 3”, as understood by one of skill in the art. A base 3 number is one in which there are only three possible digits (e.g., 0,1,2) available. The “d” in Naccache II refers to the power used to raise  $g_U$  in order to calculate  $G_U$ , an entirely different concept from a number formed using only three possible digits.

Moreover, since Naccache is the primary reference and uses steel marbles embedded in plastic, the scanner in this primary reference will detect that a marble is either present or not present. This measurement inherently requires only a base 2 number system. Therefore, it is submitted that Naccache cannot serve as the primary reference for this claim.

Hence, Applicants submit that the rejection currently of record fails to meet the initial burden.

#### Claims 10-13 and 46

The Examiner alleges that these claims are rendered obvious by Naccache, further in view of Kaish, further in view of Lien, and further in view of Noyes. The Examiner concedes that Naccache/Kaish/Lien fails to teach or suggest dropping of reading outside a certain range.

To overcome this deficiency, the Examiner relies upon Noyes, pointing to the description at lines 57-64 of column 10 and alleges that it would be obvious to incorporate this feature of Noyes in order to reduce the effects of noise.

Applicants first submit that the secondary reference Noyes is related to printers and, therefore, clearly addresses an entirely different problem from that addressed by Naccache/Kaish/Lien. Therefore, as a reasonable objective prior art evaluation of techniques used in the art of preparing security cards such as Naccache demonstrates, there would be no reason whatsoever, absent impermissible hindsight, for one of ordinary skill in the art to consult an unrelated reference in another art, if that person were attempting to improve Naccache.

Second, Applicants submit that the primary reference in the present evaluation is Naccache. This method uses steel marbles embedded in plastic. As such, there is no noise, since the marbles are either in a location or not in a location. Thus, in this discrete technique in Naccache, Applicants submit that there is no noise that requires to be reduced. That is, if Naccache cannot detect the presence of each marble, then its method simply will not perform its intended purpose.

Moreover, relative to claim 46, the rejection simply fails to address the plain meaning of the claim language.

#### Claims 14 and 49

The Examiner alleges that these claims are rendered obvious by Naccache, further in view of Kaish, further in view of Lien, and further in view of Bratchley. The Examiner concedes that Naccache/Kaish/Lien fail to teach or suggest sensing a degeneration, as required by claim 14. To overcome this deficiency, the Examiner points to lines 8-9 and 34 of column 6 of

Bratchley and alleges that it would be obvious to modify “*... Naccache, Kaish, and Lien by detecting the emission decay, as disclosed by Brantley, as such a characteristic is one of a high-security entity.*”

Applicants again submit that the evaluation of the rejection currently of record is based on Naccache and that this primary reference uses steel marbles embedded in plastic. Applicants submit that if these marbles are missing, the method will not work. Therefore, it is submitted that Naccache inherently cannot be subject to degeneration and still function in its intended manner.

Moreover, the description at line 34 indicates that emission decay characteristics is one factor to take into account in designing the formulation of the coatings, inks, and plastics (e.g., see lines 20-26) and detector system (e.g., see lines 26-38). This design concern is an entirely different concept from measuring the degeneration of a sample, as required by claim 14, or of recording the time stamp of the reading so that degeneration can be thereby be calculated and used as a factor in determining authenticity, as required by claim 49.

#### Claim 48

The Examiner alleges that claim 48 is rendered obvious by Naccache, further in view of Kaish, further in view of Lien, and further in view of Kawano. The Examiner concedes that Naccache/Kaish/Lien fails to teach or suggest change in readings to detect altering of a container. To overcome this deficiency, the Examiner points to lines 49-61 of column 10 of Kawano and alleges that one of ordinary skill in the art would have been motivated to modify Naccache/Kaish/Lien in order to detect tampering.

However, Applicants submit that the primary reference Naccache relates to a plastic card. There is no suggestion in that reference to use this plastic card as a seal on a container, as required by the plain meaning of the claim language.

Moreover, the change in pressure in Kawano are due to piercing a hole in the container, not from altering the sample that seals the container. The piercing of a hole would not alter the seal unless that location were specifically pierced, so it is submitted that the loss of pressure in Kawano is not reasonably related to an alteration of a seal on an opening mechanism of a container.

Claim 51

The Examiner alleges that Naccache, further in view of Kaish, further in view of Lien, and further in view of Swanberg, renders obvious the present invention defined by claim 51. The Examiner is understood as conceding that Naccache fails to teach or suggest using a plurality of samples.

However, the Examiner alleges that somehow Kaish is assumed as being incorporated in all aspects missing from Naccache and, in particular, that lines 31-43 of column 28 of Kaish teaches dividing a card into different zones that are separately usable, so that this feature is understood as incorporated into/obvious over Naccache. The Examiner concedes that, even so, none of Naccache, Kaish, or Lien teaches or suggests destroying a portion by a reader to make a payment.

Nonetheless, the Examiner points to lines 5-15 of column 1 of Swanberg and alleges that one of ordinary skill in the art would incorporate this feature that an attendant, which the Examiner considers equivalent to a “reader”, since such modification would allow for offering of reduced rate multiple ride cards.

Applicants respectfully submit that the initial burden of a *prima facie* rejection has clearly not been met in this rejection.

First, the rejection is based on Naccache as being the primary reference. Naccache clearly fails to teach dividing the plastic card into different segments and, indeed, clearly teaches using the entire card as the random sample. It is also clear that the reader in Naccache, a scanner, cannot physically destroy a portion of the plastic card into which are embedded steel marbles.

Therefore, since it is also clear that destroying a portion of the plastic card (e.g., by an attendant punching out holes in the plastic) in Naccache would defeat the purpose for which it was intended, this reference cannot even serve as the primary reference for this claim. That is, as clearly stated in MPEP §2143.01: “*If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.*”

Relative to the urging of changing the reader from that of the scanner in the primary reference Naccache to being an attendant, Applicant submits that such contradiction of terms

would render the evaluation invalid *per se*, since a proper rejection would require that the “reader” be at least consistent with its use in the parent claim.

Therefore, claim 51 is clearly patentable over the prior art currently of record.

#### V. FORMAL MATTERS AND CONCLUSION

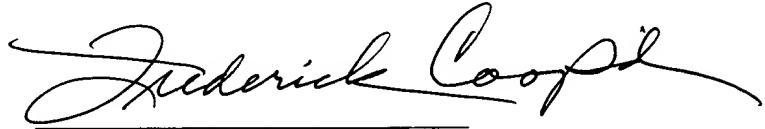
In view of the foregoing, Applicant submits that claims 1, 3, 4, and 7-53, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee’s Deposit Account No. 09-0441.

Respectfully Submitted,

Date: 4/22/05



Frederick E. Cooperrider  
Reg. No. 36,769

**McGinn & Gibb, PLLC**  
8321 Old Courthouse Road, Suite 200  
Vienna, Virginia 22182  
(703) 761-4100  
**Customer No. 21254**